

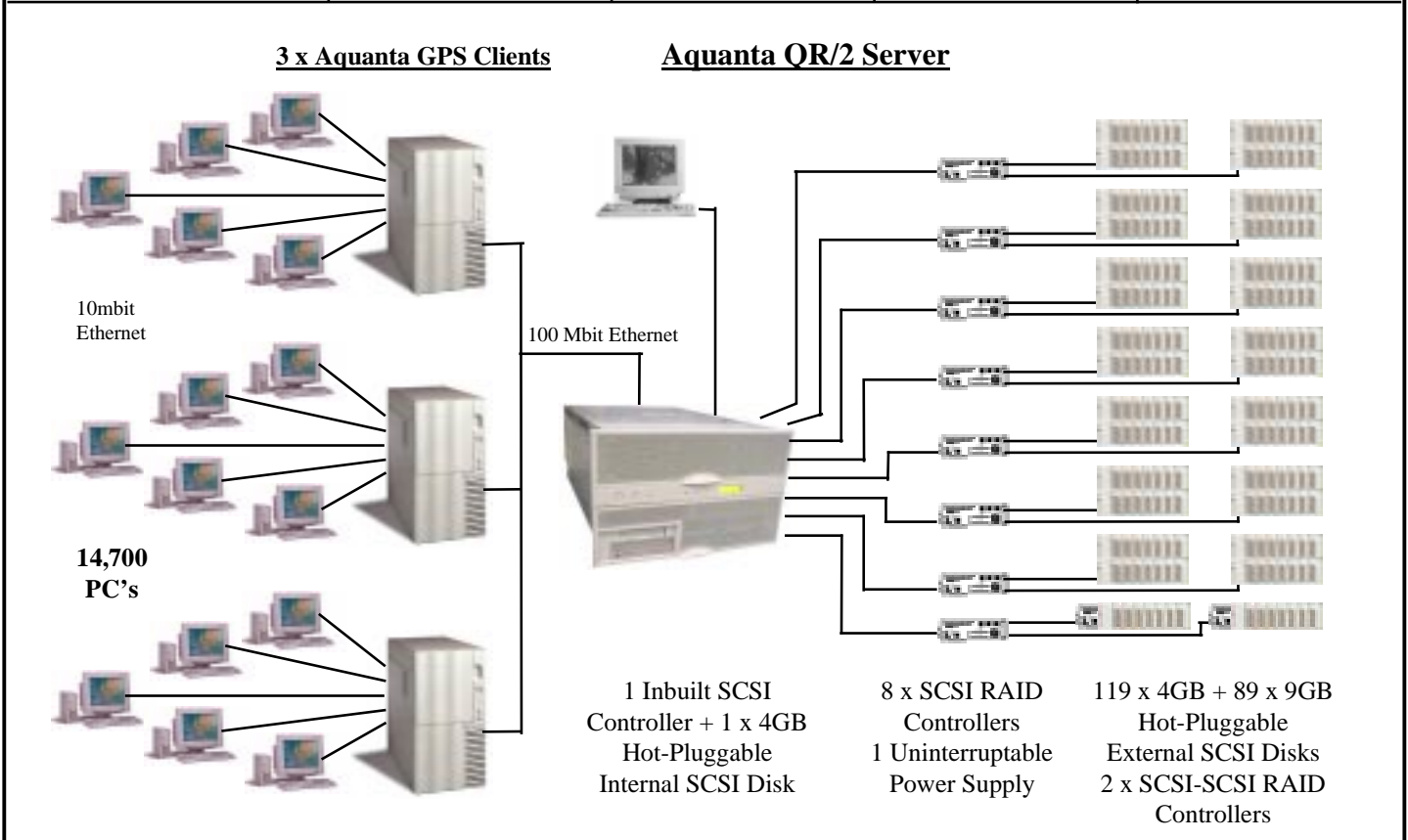


Aquanta QR/2 Server C/S

TPC-C Rev. 3.4

Report Date:
6-Nov-1998

| | | | |
|---|---|--|-------------------------------------|
| Total System Cost | TPC-C Throughput | Price/Performance | Availability Date |
| \$455,520 | 18,343.17 tpmC | \$24.83 per tpmC | 29-Dec-1998 |
| Processors | Database Manager | Operating System | Other Software |
| 4 Pentium® II Xeon 400 MHz 1MB L2 cache | Microsoft SQL Server Enterprise Edition 7.0 | Microsoft NT Server 4.0 Enterprise Edition | Microsoft IIS 3.0 Tuxedo 6.3 CFS |
| | | | 14,700 |



| System Components | Server | | Clients | |
|-------------------|----------|---|----------|---|
| | Quantity | Type | Quantity | Type |
| Processors | 4 | 400 MHz Pentium® II Xeon with 1MB Level 2 Cache | 3 | 2 x 300MHz Pentium® II with 512KB Level 2 Cache |
| Memory | 1 | 4096MB | 3 | 256MB |
| Disk Controllers | 8 + 2 | SCSI RAID | 3 | Inbuilt SCSI |
| | 1 | Inbuilt SCSI | | |
| Disk Drives | 119 | 4.24 GB | 3 | 2.02 GB |
| | 89 | 8.48 GB | | |
| | 1 | 4.23 GB | | |
| Total Storage | | 1263.15 GB | | 6.06 GB |
| CD-ROM / Tape | 1 | CD-ROM Drive | 3 | CD-ROM Drive |

| Unisys Corporation | | Aquanta QR/2 Server C/S | | | | TPC-C Rev 3.4 6-Nov-1998 | |
|---|----------------|----------------------------|---------|---------------|----------|--|-------------------|
| Description | Style | Third Party Brand | Pricing | Unit Price | Qty. | Extended Price | 5 Years Maint. |
| Server Hardware | | | | | | | |
| SYS: Aquanta QR/2, w/ CDRom, 0 Proc, 0MB Mem | QR2000101-BAS | | | 1 | \$10,820 | \$10,820 | \$2,016 |
| PROC: 1x400MHz Pentium II /1MB Cache | XER2400-1MB | | | 1 | \$3,955 | \$15,820 | \$3,552 |
| ACC: Voltage Regulator Module, Processor | XEO24001-VRM | | | 1 | \$46 | \$276 | |
| MEM: 128 MB Memory Upgrade | DIM5072-128 | | | 1 | \$786 | \$25,152 | \$6,144 |
| DISK: 4GB Drive, Ultra SCSI SCA | HDS417-CX1 | | | 1 | \$746 | \$746 | \$192 |
| ETHERNET: 100Mbit/sec, PCI 32-bit | ETH1010051-PCI | | | 1 | \$117 | \$117 | |
| CDROM: 14-32x Speed, SCSI | CDR1432-SI | | | 1 | \$161 | \$161 | \$48 |
| MONITOR:15-inch Color | EVG2000-E | | | 1 | \$272 | \$272 | |
| KEYBD: 104 Key Spacesaver | PCK104-SKB | | | 1 | \$31 | \$31 | |
| MOUSE: 2 Button PS2 | PWM1-PS2 | | | 1 | \$23 | \$23 | |
| CTRL:RAID Tri-SCSI-2 Ultra PCI, 0MB Mem. | RAD9602-PCI | | | 1 | \$1,692 | \$13,536 | \$4,224 |
| MEM: 16 MB ECC EDO Memory Upgrade | RAD9616-MEM | | | 1 | \$225 | \$1,800 | |
| CBL: SCSI 68-pin HD->VHD Conn's | CBL2210-OSM | | | 1 | \$90 | \$1,440 | |
| DISK: 4GB Drive, 10K, SCA + 10% spares | OSD4203-W45 | | | 1 | \$625 | \$81,875 | spared |
| DISK: 9GB Drive, 10K, SCA + 10% spares | OSD9203-W45 | | | 1 | \$930 | \$91,140 | spared |
| CAB: Disk, 7 SCA w/ 050 I/F & Cat-Cbl, 0 Disks, 3U | OSM310050-U05 | | | 1 | \$1,345 | \$18,830 | \$7,728 |
| CAB: Disk, 7 SCA w/ 057 I/F, 0 Disks, 3U | OSM310057-U05 | | | 1 | \$1,350 | \$18,900 | \$7,728 |
| CAB: Disk, 7 SCA w/ 100 I/F, 0MB, 0 Disks, 3U | OSM310100-U05 | | | 1 | \$2,727 | \$5,454 | \$2,448 |
| MEM: 32MB OSM cache | OSM1000-C32 | | | 1 | \$150 | \$300 | \$144 |
| CAB: Rackmount Kit for Disk Cages | OSM3000-RMK | | | 1 | \$84 | \$2,520 | |
| PWR: 2nd Power Supply Upgrade, OSM Cabinet | OSM3000-APM | | | 1 | \$261 | \$522 | \$192 |
| PWR:3000 VA UPS, 3U | UPD30001-SXR | | | 1 | \$2,239 | \$2,239 | \$648 |
| CAB: Rack Cabinet, w/ fill pnls, 36U | CAB361-SXR | | | 1 | \$1,384 | \$4,152 | |
| CAB: Link kit for 36U cabinets | LNK361-SXR | | | 1 | \$231 | \$462 | |
| CAB: Bezel kit 36U | BEZ3611-CAB | | | 1 | \$206 | \$618 | |
| CAB: Stabilizer kit 0U | WGT39581-SXR | | | 1 | \$110 | \$330 | |
| PNL: L&R side panels 36U | PAN3621-SXR | | | 1 | \$192 | \$192 | |
| Subtotal | | | | | | \$297,728 | \$35,064 |
| Server Software | | | | | | | |
| Microsoft NT Server Enterprise Edition 4.0, incl 25 CALs | | Microsoft | 2 | \$3,999 | 1 | \$3,999 | \$0 |
| Microsoft SQL Server Enterprise Edition 7.0, unlimited user license | | Microsoft | 2 | \$28,999 | 1 | \$28,999 | \$10,475 |
| Subtotal | | | | | | \$32,998 | \$10,475 |
| Client Hardware | | | | | | | |
| SYS: Aquanta GPS, 0 Proc, 0MB Mem | GPS600071-BAS | | | 1 | \$945 | \$2,835 | \$936 |
| PROC:1x300MHz Pentium II/512KB Cache | GPS2300-512 | | | 1 | \$863 | \$5,178 | \$1,152 |
| UPGRD: GPS P-II 2nd CPU Supt. | GPS600071-P2U | | | 1 | \$32 | \$96 | \$144 |
| MEM: 128 MB Memory Upgrade | DIM672-128 | | | 1 | \$741 | \$4,446 | \$1,008 |
| DISK: 2GB Ultra SCSI 3.5 Internal | HDS2000-SW7 | | | 1 | \$573 | \$1,719 | \$864 |
| CDROM: 14-32x Speed, SCSI | CDR1432-SI | | | 1 | \$161 | \$483 | \$144 |
| ETHERNET: 100Mbit/sec, PCI 32-bit | ETH101007-PCI | | | 1 | \$101 | \$606 | |
| ETHERNET: 100Mbit/sec, PCI 32-bit, Quad | SF1001-ET4 | | | 1 | \$1,212 | \$3,636 | \$720 |
| MONITOR:15-inch Color | EVG2000-E | | | 1 | \$272 | \$816 | |
| KEYBD: 104 Key Spacesaver | PCK104-SKB | | | 1 | \$31 | \$93 | |
| MOUSE: 2 Button PS2 | PWM1-PS2 | | | 1 | \$23 | \$69 | |
| Subtotal | | | | | | \$19,977 | \$4,968 |
| Client Software | | | | | | | |
| Microsoft Windows NT Server 4.0, incl 5 CALs | | Microsoft | 2 | \$809 | 3 | \$2,427 | \$0 |
| Microsoft Visual C++ Professional 5.0 | | Microsoft | 2 | \$499 | 1 | \$499 | \$0 |
| TUXEDO Core Functional Services 6.3 for NT | | BEA | 3 | \$3,000 | 3 | \$9,000 | \$6,750 |
| Subtotal | | | | | | \$11,926 | \$6,750 |
| User Connectivity | | | | | | | |
| Ethernet Hub, 8-Port 100TX TrueFast + 10% spares | NX-H8TXD | Netlux | 4 | \$215 | 3 | \$645 | spared |
| Ethernet Hub, 8-Port 10Base-T + 1-Port BNC + 10% spares | DEH2924 | DataComm | 5 | \$33 | 2023 | \$66,759 | spared |
| Subtotal | | | | | | \$67,404 | \$0 |
| Total | | | | | | \$430,033 | \$57,257 |
| Western Micro discount | | | | 1 | | (\$31,771) | |
| Notes: | | | | | | | |
| 1. HW Maintenance - 1st 36 months included in Unisys product costs. The next 24 months are at the level: Standard Performance-Gold. | | | | | | | |
| 2. All Microsoft maintenance is covered by the maintenance cost of Microsoft SQL Server. | | | | | | | |
| 3. 10% or minimum 2 spares are added in place of onsite service (products have a five year year return-to-vendor warranty) | | | | | | | |
| 4. Pricing: 1 = Western Micro, 2 = Microsoft, 3 = BEA, 4 = Netlux, 5 = DataComm Whse | | | | | | | |
| The benchmark results and test methodology were audited by Richard Gimarc of Performance Metrics, Inc. | | | | | | | |
| Prices used in TPC benchmarks reflect the actual prices a customer would pay for a one-time purchase of the stated components. Individually negotiated discounts are not permitted. Special prices based on assumption about past or future purchases are not permitted. All discounts reflect standard pricing policies for the listed components. For complete details, see the pricing sections of the TPC benchmarks specifications. If you find that the stated prices are not available according to these terms, please inform the TPC at pricing@tpc.org. | | | | | | | |
| | | | | | | Five Year Cost of Ownership \$455,520 TPC-C Throughput 18,343.17 \$/tpmC \$24.83 | |

NUMERICAL QUANTITIES SUMMARY

Unisys Aquanta QR/2 Server

Microsoft SQL Server Enterprise Edition 7.0

MQTh, Computed Maximum Qualified Throughput:

18343.17

% throughput difference, reported & reproducibility runs:

0.02%

Transaction Mix

| | |
|--------------|--------|
| New Order | 44.84% |
| Payment | 43.09% |
| Delivery | 4.00% |
| Stock-Level | 4.04% |
| Order-Status | 4.03% |

Response Times

| Transaction | Average | Maximum | 90th %ile |
|---------------------|---------|---------|-----------|
| New-Order | 0.44 | 5.72 | 0.62 |
| Payment | 0.27 | 4.37 | 0.43 |
| Delivery | 0.12 | 3.13 | 0.14 |
| Stock-Level | 2.45 | 6.23 | 3.32 |
| Order Status | 0.32 | 2.80 | 0.47 |
| Menu | 0.12 | 3.56 | 0.13 |
| Delivery (Deferred) | 0.56 | 3.88 | 0.84 |

Response time delay added for emulated components (seconds)

| | |
|--------------------|-----|
| RT Response time | 0.1 |
| Menu Response time | 0.1 |

Keying/Think Time Times (seconds)

| Transaction | Minimum | Average | Maximum |
|--------------|---------|-------------|-------------|
| New-Order | 18.00/0 | 18.01/12.04 | 18.06/120.3 |
| Payment | 3.00/0 | 3/12.05 | 3.04/120.3 |
| Delivery | 2.00/0 | 2/5.06 | 2.03/50.6 |
| Stock-Level | 2.00/0 | 2/5.03 | 2.03/50.6 |
| Order-Status | 2.00/0 | 2/10.08 | 2.03/100.71 |

Test Duration

| | |
|--|------------|
| Ramp up time | 39 minutes |
| Measurement interval (M) | 30 minutes |
| Transactions (all types) completed during measurement interval | 1227252 |
| Ramp-down time | 18 minutes |

Checkpointing:

| | |
|-----------------------|------------|
| Number of checkpoints | 1 |
| Checkpoint interval | 30 minutes |